REMARKS

Claims 12-16, 18-35, 37, 39, 41-48, 51 and 53-61 are pending in the current application. Claims 1-11 and 17 are cancelled in this Response. Claims 36, 38, 40, 49-50 and 52 were previously cancelled. Claims 35, 37, 39, 41-48, 51 and 53-59 were withdrawn from consideration by the Examiner. Claims 12-14, 19-21, 23-26 and 32-33 have been amended. Support for the amendments may be found throughout the specification, for example, in the originally filed claims. Claims 60 and 61 are new. Support for these claims may be found throughout the specification, for example, in the originally filed claims. Applicants expressly reserve the right to pursue cancelled subject matter in this and/or continuing applications.

Claim Rejections under 35 USC § 102

Claims 1-4, 10, 11, 19, 23, 24, 26, 27, 29, 30 and 33-34 were rejected under 35 U.S.C. § 102(b) as being anticipated by Boehm et al. (Pharm Res. Vol. 19, No. 9, Sept. 2002).

Applicants respectfully submit that this rejection is moot in light of the amendments to the Claims and respectfully request that this rejection be withdrawn.

Claims 1-4, 10, 11, 19, 23, 24, 26, 27, 29, 30 and 33-34 were rejected under 35 U.S.C. § 102(b) as being anticipated by Gupta et al. (Gupta et al. Developments in Biological Standardization. Basel, CH, vol. 92, 1998, pages 63-78.)

Applicants respectfully submit that this rejection is moot in light of the amendments to the Claims and respectfully request that this rejection be withdrawn.

Claim Rejections under 35 USC § 103

Claims 14-18 and 28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gupta et al. or Boehm et al. as applied to claims 1-4, 10, 11, 19, 23, 24, 26, 27, 29, 30 and 33-34 above, and further in view of any one of Hilgers et al. (WO 98/17310), Nicol et al. (Gene Therapy, 9(20): 1351-1358, 2002), Zhiqiang Yang et al. (J. Biomed. Materials Res. 6291:14-21, 2002), or Luka Milas et al. (International J. Radiation Oncology Biol. Phys., 55(3): 707-712, 2003).

Applicants respectfully submit that this rejection is moot in light of the amendments to the Claims and respectfully request that this rejection be withdrawn.

Claims 5-9, 12-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gupta et al. or Boehm et al. as applied to claims 1-4, 10, 11, 14, 15, 16-19, 23, 24, 26, 27, 29, 30 and 33-34 above, and further in view of any one of Hilgers et al. (WO 98/17310), Nicol et al. (Gene Therapy, 9(20): 1351-1358, 2002), Zhiqiang Yang et al. (J. Biomed. Materials Res. 6291:14-21, 2002), or Luka Milas et al. (International J. Radiation Oncology Biol. Phys., 55(3): 707-712, 2003). Applicants respectfully submit that this rejection is moot as applied to cancelled Claims 5-9. Applicants respectfully traverse this rejection as applied to pending Claims 12-13.

Neither Gupta et al. nor Boehm et al. teaches an immunogenic composition comprising a capsular polyribosylribitol phosphate (PRP) polysaccharide of *Haemophilus influenzae* B and a polyanionic polymer, as claimed by Applicants. As defined by Applicants on page 6 of the Specification, a polyanionic polymer is a polymer which, when dissolved in an aqueous medium at pH7 (and preferably also at pH 6.1 – a typical pH of the DTPa and DTPw vaccines of the invention) is negatively-charged due to the presence of anionic constitutional repeating units (for example, units containing sulphate, sulphonate, carboxylate, phosphate and borate groups).

In contrast, Gupta et al. and Boehm et al. relate to biodegradable microspheres, which are used to encapsulate antigens.

Gupta et al. relates to biodegradable polymer microspheres as vaccine adjuvants and delivery systems; Gupta et al. encapsulated tetanus toxoid (TT) and *H. influenzae* type b capsular polysaccharide conjugated to TT inside PLGA (poly (lactic/glycolic) acid) microspheres and evaluated the antibody levels in mice. (abstract).

Boehm et al. examined the feasibility of combining antigens in biodegradable microspheres, specifically mono- and multivalent vaccines of *Haemophilus influenzae* type b (Hib) conjugate, diphtheria toxoid (DT), tetanus toxoid (TT), and pertussis

toxoid (PT) in poly(lactic acid) (PLA) and poly(lactic-coglycolic acid) (PLGA) microspheres. (abstract)

PLGA and PLA are not anionic polymers nor are they readily water soluble. (Enclosed for the Examiner's convenience are (1) pages 1529-1530 from the Aldrich Handbook of fine chemicals 2003-2004 showing that these chemicals do not have anionic repeating units, and (2) a current MSDS for 50:50 poly(DL-lactide-co-glycolide) polymers from Birmingham Polymers, www.birminghampolymers.com, www.absorbables.com/documents/DL-PLGMSDS.pdf, the company from which Gupta et al. obtained their microspheres, Gupta et al. p. 59).

Applicants respectfully submit that neither Gupta et al. nor Boehm et al. teach polyanionic polymers, as defined by Applicants.

Futhermore, Gupta et al. and Boehm et al. actually teach away from the use of polyanionic polymers as defined by Applicants. Gupta et al. and Boehm et al. sought to encapsulate antigens for the controlled release of antigens. To do so, they utilized microspheres which react slowly with water to become soluable (MSDS for lactide glycolide containing polymer products, page 4). For example, the microspheres in Gupta et al. retained a continuous release of total protein every week for four weeks (page 69, Single Dose Tetanus Toxoid Vaccine, paragraph 3). According to Boehm et al., ideally a limited fraction of the antigen should be released from the microspheres immediately for immunologic priming, whereas residual amounts should be retained for later boosting (page 1333, left column, second full paragraph).

Therefore, as Gupta et al. and Boehm et al. do not relate to polyanionic polymers and teach away from their use, there is no motivation to combine either of them with of any one of Hilgers et al., Nicol et al., or Luka Milas et al. Hilgers et al. relates to polyanionic polymers as adjuvants for mucosal immunization. Nicol et al. relates to poly-L-glutamate, an anionic polymer, as a formulation that enhances the transfer and expression of genes delivered by intramuscular injection with in vivo electroporation (title & abstract). Luka Milas et al. relates to the use of poly(L-glutamic acid)-paclitaxel (PG-TXL), a water-soluble conjugate that allows higher concentrations of TXL to be delivered selectively to tumors (pages 707-708).

Furthermore, Zhiquiang Yang et al. do not teach polyanionic homopolymers, as claimed by Applicants. Zhiquiang Yang et al. relates to poly(glutamic acid)poly(ethylene glycol) hydrogels. Therefore, Gupta et al. or Boehm et al. in view of Zhiquiang Yang et al. do not include each element claimed by Applicants.

Applicants respectfully submit that the Examiner has failed to establish a established a *prima facie* case of obviousness for Claims 12-13 over Gupta et al. or Boehm et al. as applied to claims 1-4, 10, 11, 19, 23, 24, 26, 27, 29, 30 and 33-34 above, and further in view of any one of Hilgers et al., Nicol et al., Zhiqiang Yang et al., or Luka Milas et al.. Applicants respectfully request that this rejection be withdrawn.

Claims 20-22, 25, and 31-32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gupta et al. or Boehm et al. as applied to claims 1-4, 10, 11, 14, 15, 16-19, 23, 24, 26, 27, 29, 30 and 33-34 above, and further in view of Boutriau et al. (WO02/00249) and Database Medsafe NEW ZEALAND MEDICINES AND MEDICAL DEVICES SAFETY AUTHORITY; 2002, GLAXOSMITHKLINE NZ LTD: "Datasheet Hiberix" XP002306401 retrieved from H1-1"P:/ANWW.MEDSAFE.GOV-r.NZJPROFS/DATASHEET/H/HIBERIXINJ,HTM..

Applicants respectfully submit that this rejection is moot in light of the amendments to the Claims and respectfully request that this rejection be withdrawn.

CONCLUSION

Should any outstanding issues remain, the Examiner is encouraged to contact Applicants' undersigned representative.

Respectfully submitted:

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